

CLAIMS

1. An apparatus for transferring a load, the apparatus comprising:

a support member coupled to a frame, the support member having a front edge, a rear edge and an upper surface, the support member moveable in a first direction relative to the frame;

a bed movable adjacent to the upper surface of the support member, the bed having a front end, a rear end, and a point disposed between the front end and the rear end, the point moveable along the first direction between first and second locations over the upper surface of the support member, the bed pivotable about an axis disposed adjacent to the rear edge of the support member, the axis oriented substantially perpendicular to the first direction; and

at least one arm having a first end and a second end, the first end moveable along the support member and the second end coupled to the bed adjacent to the front end of the bed, to raise the front end of the bed as the point approaches the second location.

2. The apparatus of claim 1, further comprising:

a gate coupled to the bed adjacent to the rear end; and

a mechanism coupled to the gate to open the gate as the point approaches the second location.

3. The apparatus of claim 1, wherein:

the axis is disposed adjacent to a point located approximately halfway between the front end and the rear end of the bed as the front end of the bed is raised.

4. The apparatus of claim 1, wherein:  
the bed fits within a pickup truck.

5. The apparatus of claim 1, wherein:  
the bed fits within a vehicle having a tailgate  
that is moveable between open and closed positions, the  
tailgate having a rear edge in the open position; and  
the axis is disposed adjacent to the rear edge of  
the tailgate.

6. The apparatus of claim 1, wherein:  
the bed is coupled to a simple machine to move  
the bed along the first direction.

7. The apparatus of claim 1, wherein:  
the bed is coupled to at least one wheel to roll  
on the support member.

8. The apparatus of claim 1, wherein:  
the bed is coupled to at least one pulley to move  
the bed along the first direction.

9. The apparatus of claim 1, wherein the bed is a cargo  
bed.

10. The apparatus of claim 1, wherein the bed is a boat  
carrier.

11. An apparatus for transferring a load, the apparatus comprising:

    a vehicle;

    a support member coupled to the vehicle, the support member having a front edge and a rear edge;

    a bed coupled to the vehicle having a front end and a rear end, the bed movable in a first direction relative to the vehicle and pivotable about a point adjacent to the rear edge of the support member; and

    at least one arm coupled to the support member and coupled to the bed adjacent to the front end, the arm constrained to substantially linear motion at a first location of the vehicle to move the bed in the first direction relative to the vehicle, the arm constrained to substantially rotary motion at a second location of the vehicle to tilt the bed relative to the vehicle.

12. The apparatus of claim 11, wherein:

    the support member is movable in the first direction relative to the vehicle.

13. The apparatus of claim 11, wherein:

    the bed is coupled to a simple machine to move the bed along the first direction relative to the vehicle.

14. The apparatus of claim 11, wherein:

    the vehicle has a tailgate that is moveable between open and closed positions; and

    the support member is moveable over the tailgate in the open position.

15. The apparatus of claim 11, wherein:  
the vehicle is a pickup truck having a truck bed;  
and  
the support member is coupled to the truck bed.

16. The apparatus of claim 11, wherein:  
the point is disposed adjacent to a point located approximately halfway between the front end and the rear end of the bed when the bed is tilted.

17. The apparatus of claim 11, further comprising:  
a winch coupled between the bed and the vehicle to move the bed.

18. A method for transferring a load, the method comprising:  
providing a bed and a vehicle, the bed having a front end and a rear end, the vehicle having a tailgate, the tailgate moveable between a substantially vertical position and a substantially horizontal position;  
moving the bed in a rearward direction beyond a rear edge of the tailgate when the tailgate is in the substantially horizontal position; and  
lifting the front end of the bed so that the bed pivots from a substantially horizontal orientation to an inclined orientation as the bed moves in the rearward direction, the lifting occurring approximately when the rear end of the bed moves past the rear edge of the tailgate.

19. The method of claim 18, wherein lifting the front end of the bed includes:

coupling at least one arm to the bed and to the vehicle; and

pivoting the arm.

20. The method of claim 18, wherein moving the cargo bed includes:

sliding the cargo bed over a support member, and moving the support member, relative to the vehicle, in the rearward direction.

21. The method of claim 20, further comprising:

moving the support member in a rearward direction at least as far as the rear edge the tailgate.

22. The method of claim 18, wherein lifting the front end of the cargo bed is performed with at least one simple machine and is performed without any hydraulic equipment.